
The Boston Economy

1985

CITY OF BOSTON
RAYMOND L. FLYNN, MAYOR
BOSTON REDEVELOPMENT AUTHORITY
STEPHEN COYLE, DIRECTOR

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March 1985

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EXECUTIVE SUMMARY

As of Spring 1985, the economic outlook for the City of Boston is bright. Key measures of the economic health of the New England region and the City of Boston point to an outstanding year and good prospects for the rest of the decade. In particular, rising capital investment, expanding job openings, and relatively low unemployment rates indicate burgeoning economic strength.

Positive signs abound. The most striking element is the construction of millions of square feet of office, hotel, retail, industrial and residential space. Private development completions reached an all-time high in 1984, and development scheduled for the next several years should sustain the expansion and transformation of the City's economic base. In addition, the beginnings of a revival in urgently needed City public infrastructure investment lends further support to the outstanding prospects for the City's economy. As a consequence, Boston's investment rate (public and private investment as a percent of the City's production of goods and services), in 1984, and the 1985-87 years, will handily exceed that of any recent historic period in the City.

The City of Boston is the regional economic center of New England. Boston and its metropolitan area spark economic activity in the region and respond to regional economic trends. Since 1976, the economies of the region and its major city and metropolitan area have performed exceptionally well as generators of jobs and income. Recovering smartly from the employment lag of the early 1970s, New England and the Boston area weathered the recessions of the early 1980s with relatively low unemployment rates and achieved better-than-average growth in employment and per capita personal income. Substantial structural change in the City and region in the last two decades, favoring business and professional services, higher education and medicine, finance and high-tech industry, set the stage for the economic expansion that has been most evident in the last eight years. Employment in Boston increased by 20,000 jobs, in 1984, and 80,000 jobs since 1976.

Boston, as a place to live, and the quality of life in the City, are also making progress, though there is much room for improvement. Population has declined since 1970, while the number of households has remained stable, with losses of blue collar workers and their families, and gains of young, middle-class adults and minorities. There were important advances in educational attainment and in the occupational skills of the labor force. There has been a revival in cultural facilities. Innovative public services for the elderly and youth, and health services thrive at a leaner level. Income levels reflect the effects of inflation, student households, and the rise in minorities which now make up almost one-third of Boston's population.

An increase in the housing stock was accompanied by a broad improvement in condition, through new construction, demolition, conservation and rehabilitation. A notable upturn in housing demand and values, responding to the surge in baby-boom household growth and the expansion of jobs since 1976, resulted in housing scarcity and pressure on rentals.

Neighborhoods that were in decline showed visible signs of improvement. The City's expanding job opportunities generated an expanding flow of income. Job capture was aided by measures fostering advances in education, manpower training, and health. A range of initiatives in housing fix-up and public improvements enhanced livability. More equitable tax assessing, as a consequence of revaluation and classification, encouraged investment in housing. Much remains to be done in many City neighborhoods, nevertheless. These positive trends provide some of the elements of an important potential for neighborhood economic development. An ambience of progress towards the amelioration of racial tensions has emerged.

Under the mandate of the 1980 state law on tax limitation (Proposition 2½), and federal aid cutbacks, Boston City government is lean. Municipal government employment was substantially reduced in 1981. Even with a partial recovery in 1983 (which is being pared in 1984), City government is at about the same employment level as in 1948. A one-third decline in property tax revenue, between fiscal years 1983 and 1984, was offset in large part by an increase in state aid. Beginning with FY1985, Boston's property tax revenue will rise by the allotted 2½ percent plus the effect of the new private development investment on the expansion of the taxable property base. A need for new revenue persists. City administration priorities center on addressing neighborhood concerns and working toward linking downtown development and neighborhood improvement.

INTRODUCTION

This report provides a profile of Boston's economy for planners, public officials, the business community, scholars and interested citizens. Findings related to jobs, income, population, labor force and businesses, public and private investment in the City and the City's neighborhoods are outlined.

"Recent Economic Trends and Prospects", Part I, covers the City's economic role in a regional context, employment structure and trends, and prospects for growth in the 1980s. "Investment", Part II, deals with private development and public infrastructure. Part III, "People and Neighborhoods" describes population, labor force and income, housing characteristics, and the make-up of Boston's neighborhoods. "City Government", Part IV, reviews public sector trends. In depth analytic information on each of these topics is available in a series of related reports (see references).

STATE OF NEW YORK

REPORT OF THE COMMISSIONER

FOR THE YEAR ENDING DECEMBER 31, 1900

I. RECENT ECONOMIC TRENDS AND PROSPECTS

The general economic conditions of the State during the year 1900 have been characterized by a marked depression in the agricultural and manufacturing industries. The agricultural products, such as wheat, corn, and hay, have suffered from a severe drought, which has resulted in a considerable loss of yield. The manufacturing industries, particularly the iron and steel industry, have also experienced a decline in production, due to a general contraction in demand. The commercial and financial sectors have also been affected, with a notable decrease in the volume of trade and a general feeling of pessimism among the business community. The overall economic outlook for the State is therefore gloomy, and it is expected that the conditions will continue to deteriorate in the near future.

The principal cause of the economic depression is the general contraction in demand for the State's products. This is due to a variety of factors, including the decline in the foreign market, the reduction in the domestic market, and the general feeling of uncertainty among the consumers. The agricultural industry is particularly hard hit, as the drought has not only reduced the yield of the crops, but has also increased the cost of production. The manufacturing industry is also suffering, as the demand for its products has declined. The commercial and financial sectors are also experiencing a decline, as the volume of trade has decreased and the feeling of pessimism has spread among the business community. The overall economic situation is therefore one of depression, and it is expected that the conditions will continue to deteriorate in the near future.

The State's economic prospects for the future are therefore very gloomy. It is expected that the conditions will continue to deteriorate in the near future, and that the State will experience a severe economic depression. The only way to avoid this is by a general increase in demand for the State's products, which can be achieved by a general increase in the volume of trade and a general feeling of optimism among the business community. This can be achieved by a general increase in the volume of trade and a general feeling of optimism among the business community.

I. RECENT ECONOMIC TRENDS AND PROSPECTS OF THE BOSTON ECONOMY

City's Role in the Region and the State

Employment and Income

More evidence of the strength of the regional and metro area economies and that of the City of Boston emerged in 1983. The economic recovery last year brought improvement in the nation. New England employment grew by 1.6 percent in 1983, or more than that of the rebounding national economy (1.3 percent). Per capita personal income in New England increased 7.4 percent, from 1982 to 1983, 2.2 percentage points more than nationally, representing the largest increase of the nation's regions.

In the years since 1976, New England had surpassed the national average in certain measures of economic growth according to data compiled by the U.S. Bureau of Labor Statistics and the U.S. Bureau of Economic Analysis. Employment in New England had grown 14.3 percent from 1976 to 1983 compared to a 13.6 percent gain for the nation (see Table 1). The regional unemployment rate had fallen below the nationwide rate in 1978 for the first time in ten years, and had continued at a lower level since then. In addition, New England had had the largest increase in per capita personal income among the nation's regions in the 1980-1983 period.

The national recession during 1981 and 1982 had brought a pause in economic growth in New England, yet the region maintained comparatively favorable economic conditions. Strong job growth in a broad range of services offset job losses in manufacturing, as New England employment increased by 0.8 percent from 1980 to 1982. The corresponding change in

the nation was +2.2 percent. And regional employment growth resumed in 1983.

The economic performance of Massachusetts matched regional trends. Employment rose by 12.5 percent in the state during the 1976-83 period, including a gain of 1.9 percent over 1980-1982. Employment increased slightly (0.7 percent) in 1983, and rebounded with a strong first quarter 1983-84 rise of 4.4 percent. In terms of personal income growth, Massachusetts ranked ninth among all states for the 1980-83 period, and eighth in 1982-1983 gains.

The economy of the Boston metropolitan area, of which the City is the center, performed comparatively well during the national recession, and bloomed in 1983, although the metro area had virtually no job growth during the during the 1980-82 period (0.2 percent). During 1983, the Boston metropolitan area expanded its employment by 23,000 (or 1.6 percent).

The City of Boston recorded substantial growth in employment after the severe recessions of the early- and mid-1970s. From 1976 to 1983, the Boston economy expanded by 58,000 jobs or nearly twelve percent (see Table 2). Business and professional services, health and higher education, and finance and insurance led the growth, while manufacturing and wholesale trade declined. Preliminary data indicate that the City's employment grew by about two percent during 1983.

Boston's gain of 58,000 jobs, from 1976 to 1983, was centered principally in the broad range of services activities (40,000) and finance (15,000), supplemented by more modest gains in government (4,400), transportation and communication (3,000), construction (1,900) and retail trade (1,800). See Table 2. There were net losses in

Table 1

TRENDS IN NON-AGRICULTURAL WAGE AND SALARY EMPLOYMENT AND
PERSONAL INCOME, 1976-1983

A. Annual Average Change (in percent)

Non-Agricultural Wage and Salary Employment (in percent)

Year	City of Boston	Boston Metro Area	Massachusetts	New England	United States
1976-1983	1.6%	2.4%	1.7%	1.9%	1.8%
1980-1983	.7%	.6%	.9%	.8%	.5%
1982-1983	2.0%	1.6%	.7%	1.6%	1.3%

Per Capita Personal Income (in percent)

Year	City of Boston **	Boston Metro Area	Massachusetts	New England	United States
1976-1983	10.1%	10.4%	10.0%	11.1%	9.0%
1976-1980	11.2%	11.2%	10.8%	12.8%	10.5%
1980-1982	9.2%***	10.2%***	9.8%	9.4%	8.1%
1982-1983	7.7%	7.7%***	7.7%	7.4%	5.2%

B. Percent Change

Non-Agricultural Wage and Salary Employment (in percent)

Year	City of Boston	Boston Metro Area	Massachusetts	New England	United States
1976-1983	11.6%	18.2%	12.5%	14.3%	13.6%
1980-1983	2.0%	1.8%	2.6%	2.4%	1.5%
1982-1983	2.0%	1.6%	.7%	1.6%	1.3%

Per Capita Personal Income (in percent)

Year	City of Boston **	Boston Metro Area	Massachusetts	New England	United States
1976-1983	96.2%	100.1%	95.4%	108.3%	83.4%
1976-1980	52.7%	52.9%	50.6%	62.0%	49.3%
1980-1982	19.3%***	21.5%***	20.5%	19.7%	16.8%
1982-1983	7.7%	7.7%***	7.7%	7.4%	5.2%

Table 1 (continued)

C. Absolute Numbers

Non-Agricultural Wage and Salary Employment (in thousands)

Year	City of Boston [*]	Boston Metro Area	Massachusetts	New England	United States
1976	501	1,269	2,473	5,200	88,752
1980	548	1,474	2,711	5,803	99,303
1982	548	1,477	2,763	5,849	99,526
1983	559	1,500	2,781	5,943	100,834

Per Capita Personal Income (in current dollars)

Year	City of Boston ^{**}	Boston Metro Area	Massachusetts	New England	United States
1976	\$6,078	7,043	6,698	6,166	6,367
1980	9,284	10,770	10,089	9,989	9,503
1982	11,072 ^{***}	13,087 ^{***}	12,153	11,958	11,100
1983	11,925 ^{***}	14,095 ^{***}	13,089	12,845	11,675

* Boston Employment Series is total (BEA) rather than wage and salary employment (BLS).

** Per Capita Income for Boston is from Suffolk County.

*** Estimated.

Source: U.S. Department of Labor, Bureau of Labor Statistics and
U.S. Department of Commerce, Bureau of Economic Analysis.

TABLE 2

CITY OF BOSTON EMPLOYMENT, 1976-1983
SELECTED YEARS AND CHANGE BY INDUSTRY

INDUSTRY	1976	1977	1980	1981	1982	1983	CHANGE NUMBER	1976-1983 PERCENT
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AGRI. MINING	791	617	563	499	547	566	- 225	-28.4
CONSTRUCTION	9,003	7,914	10,163	10,365	10,445	10,346	1,343	14.9
MANUFACTURING	53,385	53,763	51,861	50,811	49,685	46,989	- 6,396	-12.0
TRANSPORTATION-PU.	34,131	32,982	36,660	37,276	36,120	39,514	5,383	15.8
WHOLESALE TRADE	29,619	29,827	27,399	27,420	25,051	26,028	- 3,591	-12.1
RETAIL TRADE	55,008	54,849	55,628	55,670	55,197	56,522	1,514	2.8
FINANCE-INS-RE	62,229	63,366	70,451	74,436	76,584	76,245	14,016	22.5
SERVICES	160,902	161,988	187,991	190,249	193,602	199,017	38,115	23.7
HOTEL	4,144	4,698	6,495	6,018	6,389	6,568	2,424	58.5
MEDICAL	51,045	52,388	58,524	59,617	60,985	62,690	11,645	22.8
EDUCATIONAL	21,169	23,891	29,222	29,884	30,008	30,848	9,679	45.7
CULTURAL	4,834	4,786	4,800	4,777	4,840	4,975	141	2.9
SOCIAL-NONPROFIT	16,360	17,300	20,036	19,913	20,135	20,698	4,338	26.5
BUSINESS	27,373	28,789	33,808	33,722	34,461	35,425	8,052	29.4
OTHER	35,977	30,136	35,106	36,317	36,784	37,813	1,836	5.1
GOVERNMENT	85,048	85,882	96,017	94,683	89,142	91,717	6,669	7.8
PROPRIETORS	10,560	10,860	11,764	12,133	12,070	12,699	2,139	20.3
TOTAL ALL SECTORS	500,676	502,048	548,497	553,542	548,444	559,643	58,967	11.8

SOURCE: MASSACHUSETTS DIVISION OF EMPLOYMENT SECURITY, ES-202 SERIES;
U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, UNPUBLISHED SERIES;
BUREAU OF THE CENSUS, COUNTY BUSINESS PATTERNS, MASSACHUSETTS.

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manufacturing (-6,000), and wholesale trade (-3,600). Employment in the City had expanded notably in the 1976-81 period, was set back modestly with the 1982 recession, and surged ahead in 1983. The growth in services activities throw light on the Boston phenomena. Medical and hospital service rose by 12,800, higher education by 10,000, and business services by 9,800. Increases occurred also in hotel service (2,500), and social nonprofit and cultural activities (4,200). Job growth in Finance responded to the expansion of banking, money management and insurance activities, with the rise in interest rates and the revival of the asset management markets. There was a net gain in government employment over the seven-year period, despite a curtailment of public employment since 1980 as a consequence of tax limitation legislation impacting cities and towns, and cutbacks in state government employment.

Employment Structure

Boston's relative improvement in economic performance reflected extensive structural change in the City and metropolitan economies. A transformed economic base, driven by knowledge, information and high technology industries, now generates most of the Boston area's employment and income. Between 1950 and 1983, Boston's services activities, including transportation, communication, public utilities, finance, insurance, and business and professional services expanded their share of the City's total employment from 32 percent to 56 percent, while the manufacturing and trade shares declined to 9 percent and 15 percent respectively (see Table 3).

Table 3

COMPOSITION OF EMPLOYMENT IN BOSTON
(In Percent)

	<u>1950</u>	<u>1983</u>
Manufacturing	19	9
Services		
(Transportation, Communication, and Public Utilities, Finance and Insur., Business and Professional Serv.)	32	56
Trade	27	15
Government	15	16
Construction and Other	7	4
TOTAL	<u>100</u>	<u>100</u>

Sources: U.S. Bureau of Economic Analysis, Mass. Department of
Employment Security, Boston Redevelopment Authority.

Table 4

EMPLOYMENT AND POPULATION ROLE OF THE CITY AND THE BOSTON
METROPOLITAN AREA IN THE NEW ENGLAND REGION, 1982

	1982 Employment <u>In Services</u>	1982 Employment <u>Total</u> (Thousands)	1980 <u>Population</u>
City of Boston	193	548	563
Boston Metropolitan Area	438	1,467	2,763
New England Region	1,284	5,444	12,325

(In Percent)

City as Share of Metro Area	44%	37%	20%
Metro Area as Share of New England Area	34	27	22

Sources: U.S. Bureau of the Census, U.S. Bureau of Economic Analysis,
Massachusetts Department of Employment Security, Boston
Redevelopment Authority.

Employment in services activities has been the most rapidly expanding sector of national and New England employment since before 1970. Boston's growing services activities respond to metro area, New England region and national market demand. The region's fast-growing high-technology industry relies heavily on Boston's business, professional and finance services, and the role of the City's colleges and universities. In 1982, the City accounted for 44 percent of the metropolitan area's services employment, and the metropolitan area had a 34 percent share of the New England region's services employment (see Table 4). The extensive bases of services activities in the City and the metropolitan area contributed substantially to the region's overall gain of 900,000 jobs between 1970 and 1983. The growth of the high technology industry, business and professional services, higher education and medicine has made the economies of New England and the City of Boston more diversified and less vulnerable to significant cyclical downturns.

Unemployment Rate

The structural transformation of the City and regional economies contributed to relative improvement in unemployment trends. Most notably, the positions of Boston and its metro area have reversed since 1977 in relation to that of the United States (see Table 5). In the national recession year of 1975, unemployment rates had soared to over 12 percent in the City and over 10 percent in the metropolitan area. After 1977, unemployment rates of Boston and the metro area were progressively less than the national rates. For the City, annual rate of unemployment dropped a full point below the national rate in 1980

Table 5

**UNEMPLOYMENT RATES FOR BOSTON,
AND COMPARISONS WITH THE METRO AREA, STATE, REGION AND NATION
SELECTED YEARS, 1970 TO 1984
(IN PERCENT)**

YEAR	BOSTON CITY	BOSTON METRO AREA	MASSACHUSETTS	NEW ENGLAND	UNITED STATES
1970	4.9	4.0	4.6	4.9	4.9
1975	12.8	10.5	11.2	10.3	8.5
1977	9.5	7.8	8.1	7.6	7.0
1979	6.5	5.2	5.5	5.4	5.8
1980	6.1	5.0	5.6	5.9	7.1
1981	7.0	5.7	6.3	6.3	7.6
1982	9.1	6.7	7.9	7.8	9.7
1983	7.8	5.8	6.9	6.8	9.6
OCT. 1983*	7.7	5.6	6.4	5.8	8.4
OCT. 1984*	4.1	3.1	3.4	NA	7.4

* NOT SEASONALLY ADJUSTED

SOURCES: U.S. BUREAU OF LABOR STATISTICS; MASSACHUSETTS DIVISION OF
EMPLOYMENT SECURITY.

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and has remained well under the national average through March 1984, the latest date for which information was available at the time of the preparation of this report..

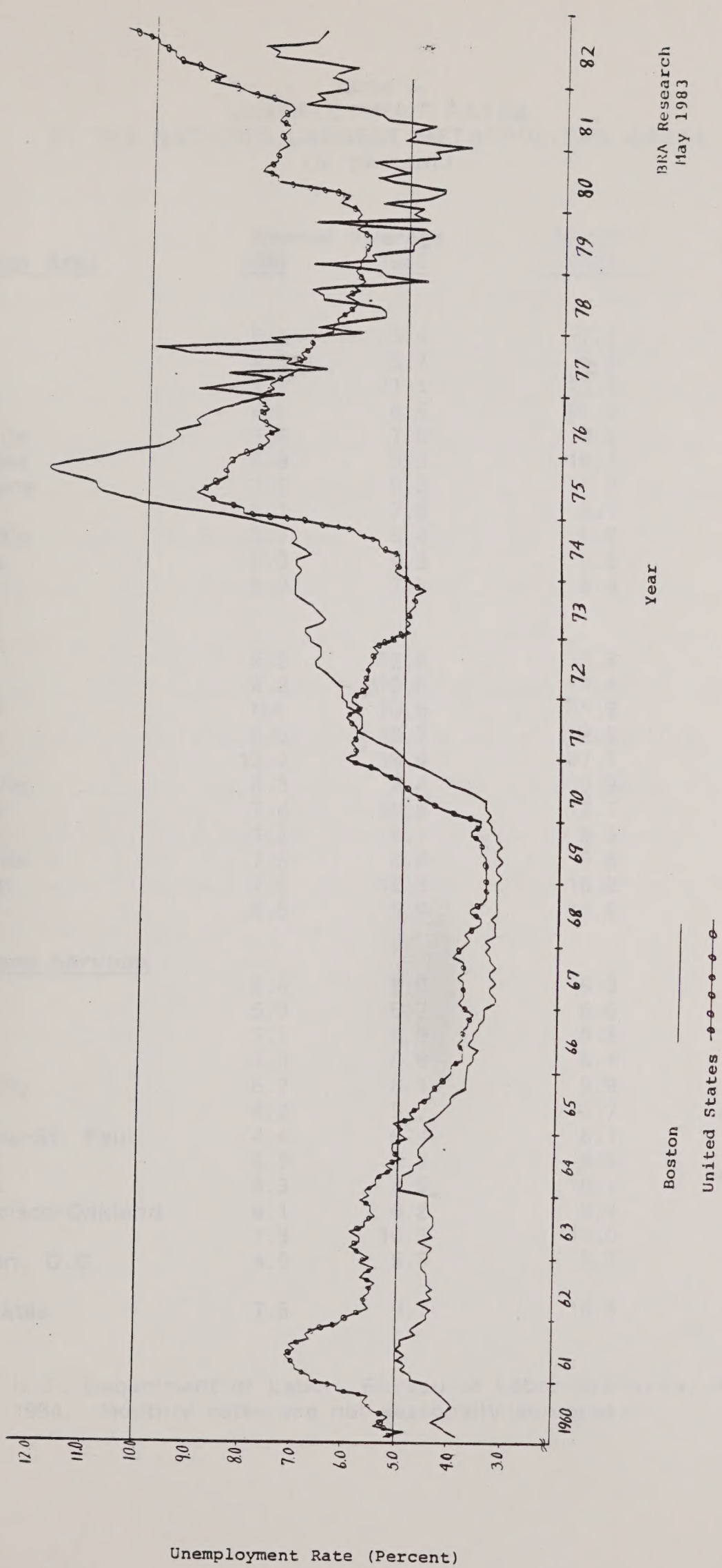
An analysis of short-term trends in unemployment rates and number of employees sheds light on changes in Boston and the metro area economy. During the 1960s, the Boston area's monthly unemployment rates were consistently below national rates (see Figure 1). The national contraction and restructuring of the first half of the 1970s hit the Boston area especially hard as employment in the older, non-durable goods manufacturers declined sharply. The Boston area's unemployment rate rose above the national rate in 1971 and continued to rise in 1975 after the national rate began to descend.

The Boston area recovered from the severe setback of 1970-75 to exceed the national growth rate in employment from 1976 to 1983. Monthly metro area unemployment rates dipped below national rates in 1976 and have stayed well under the nation's average since then. The difference between the metro area and national unemployment rates ranged from 2.7 to 4.5 percentage points during 1983 (not seasonally adjusted). In March 1984, the Boston area's rate was 4.8 percent or fifth lowest among the 31 large metropolitan areas for which information was available (see Table 6).

Although recent trends are positive, by any objective measure, unemployment rates are still too high, especially for minorities and youth. The 1980 Federal Census reported a minority unemployment rate at forty-four percent above the City average, and a youth unemployment rate at twice the average for the City.

FIGURE 1

MONTHLY UNEMPLOYMENT RATES, BOSTON AND THE UNITED STATES



BRA Research
May 1983

Table 6
UNEMPLOYMENT RATES
IN THE NATION'S LARGEST METROPOLITAN AREAS
(in percent)

<u>Metropolitan Area</u>	<u>Annual Average</u> <u>1981</u>	<u>1982</u>	<u>March</u> <u>1983</u>	<u>March</u> <u>1984</u>
<u>Sunbelt</u>				
Atlanta	5.4	6.4	7.1	5.1
Dallas	4.6	5.7	5.8	3.9
El Paso	9.1	11.1	13.3	10.0
Houston	4.1	6.5	10.0	7.3
Jacksonville	5.9	7.0	8.2	5.3
Los Angeles	6.9	9.3	10.1	7.9
New Orleans	7.8	9.3	11.2	7.9
Phoenix	5.1	7.9	8.1	4.2
San Antonio	5.7	6.4	6.8	5.1
San Diego	6.9	9.3	9.8	6.7
San Jose	5.9	7.5	8.4	5.7
<u>Industrial</u>				
Buffalo	9.5	12.6	13.6	10.7
Chicago	8.2	10.6	11.4	9.6
Cincinnati	NA	10.5	11.9	NA
Cleveland	8.5	10.7	12.6	9.9
Detroit	13.0	15.9	17.1	NA
Indianapolis	8.3	9.4	10.9	NA
Milwaukee	7.4	10.5	12.7	7.3
Newark	7.2	8.7	8.5	6.9
Philadelphia	7.5	8.6	9.6	7.0
Pittsburgh	7.5	12.3	16.2	11.8
St. Louis	8.5	9.9	11.5	9.7
<u>Broad-Based Services</u>				
Baltimore	8.4	9.9	9.3	6.3
BOSTON	5.9	6.7	6.6	4.8
Columbus	7.7	8.9	9.5	8.1
Denver	4.8	6.6	6.4	4.3
Kansas City	6.7	8.1	9.9	6.5
Memphis	8.2	9.7	10.7	8.2
Minneapolis-St. Paul	4.4	6.4	8.1	5.1
Nashville	6.9	8.8	9.4	6.0
New York	8.3	8.9	10.1	7.8
San Francisco-Oakland	6.1	8.2	8.4	6.8
Seattle	7.8	10.3	11.0	8.7
Washington, D.C.	4.9	5.8	5.7	4.5
United States	7.6	9.7	10.8	7.8

Source: U.S. Department of Labor, Bureau of Labor Statistics, May 15, 1984. Monthly rates are not seasonally adjusted.

Metro Region City and Town Dependency on Working in Boston

With a population of 563,000 and with 548,000 jobs in 1980, the census year, the City had the second highest ratio of jobs to population of any of the nation's thirty largest cities, surpassed only by Washington, D.C. The high ratio of jobs to population indicates that the City provides a direct source of employment and income for an area which extends beyond its borders and the Boston metropolitan area.

The 1980 Journey-to-Work information (U.S. Census Bureau) provides more evidence of the dependence of metro region cities and towns on the Boston economy. According to the survey of work destinations, 59 percent of the workers in Boston were residents of suburban cities and towns. Most of those workers lived in the inner suburbs, but substantial numbers of workers commuted to Boston from cities and towns throughout Eastern Massachusetts, highlighting the dependence of suburban cities and towns on the Boston economy for jobs and income. For seven cities and towns, the share of resident workers working in Boston ranged from 30 to 50 percent (see Table 7).

Table 7

COMMUTING PATTERNS TO BOSTON, 1980
NUMBER OF WORKERS AND PERCENT WORKING IN BOSTON
TOP SEVEN CITIES AND TOWNS RANKED BY PERCENT

City or Town	All Workers	Working in Boston	Working in Boston As a Percent of All Workers
Brookline	29,177	15,338	49.5
Revere	18,842	7,962	38.4
Quincy	40,820	15,694	35.9
Newton	42,208	13,830	31.0
Dedham	12,393	3,959	30.1
Medford	26,789	8,678	30.0
Everett	16,141	5,355	30.0

Source: U.S. Bureau of the Census, Summary Characteristics for Governmental Units and Standard Metropolitan Statistical Areas, Massachusetts, PHC80-3-23; Place of Work Destinations 1980, Summary Tape File 4.

Boston As the Nation's Preeminent Services Activities Center
Role of Services in the Nation's Large Cities

Among the nation's large cities, Boston is preeminent in the extent of structural change and in the relative importance of the rapidly growing services sector (transportation, communication and public utilities, finance and insurance, business and professional services, health and higher education). The share of Boston's employment in services activities increased from 44 percent, in 1969, to 54 percent, in 1980, in comparison with a growth, for the nation's 34 largest cities, from 34 percent, in 1969, to 38 percent, in 1980 (see Table 8). The comparable shares for the nation as a whole were 28 percent in 1969 and 31 percent in 1980. As the leading modern services activity center of the nation, Boston's ranking was followed by that of San Francisco, New York, New Orleans, Philadelphia, St. Louis, Denver, Newark, Atlanta and Baltimore (see Table 9).

Private services were the largest source of employment growth in Boston and the nation's large cities. From 1969 to 1980, private services in the nation's large cities expanded by 26 percent while all other sectors, including manufacturing, trade, construction, and government, grew by only 4 percent. Overall employment growth had averaged 11 percent. In the 1980s, private services continues to make up most of the new jobs in urban areas, including Boston.

Export Role of Boston's Services Activities

A traditional source of employment for export--manufacturing--plays a diminishing role in Boston's economy. Boston's employment outlook is

Table 8

DISTRIBUTION OF EMPLOYMENT BY BROAD INDUSTRY GROUPS
(As a Percent of Total Employment)

	<u>Manufacturing and Trade</u>		<u>Private Services</u> [*]	
	<u>1969</u>	<u>1980</u>	<u>1969</u>	<u>1980</u>
Boston	35	26	44	52
34 Large Cities	45	41	34	38
United States	46	43	28	31

* Private services include three 1-digit SIC categories: Transportation and Public Utilities; Finance, Insurance and Real Estate; and Services (Business, Professional, Health and Higher Education).

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Table 9

ROLE OF SERVICES ACTIVITIES IN THE NATION'S LARGE CITIES:
PRIVATE SERVICES EMPLOYMENT AS A PERCENT OF
TOTAL NON-FARM WAGE AND SALARY EMPLOYMENT,
TOP 10 OF 34 LARGE CITIES, 1980

<u>Cities</u>	<u>Total Employment By Place Of Work</u>	<u>Employment In Private Services</u>	<u>Private Services As a Percent of Total Employment</u>	<u>Rank</u>
Boston	557,597	300,338	52	1
San Francisco	593,319	305,361	51	2
New York	3,439,222	1,702,666	49	3
New Orleans	342,850	153,238	45	4
Philadelphia	813,821	356,991	44	5
St. Louis	382,179	164,772	43	6
Denver	437,862	185,376	42	7
Newark	395,828	162,593	41	8
Atlanta	761,307	307,130	40	9
Baltimore	484,435	196,617	40	10
34 Cities Total	28,226,920	10,754,598	38	
United States	95,298,000	29,819,000	31	

promising, nevertheless, because the City exports health and educational services, business and professional services and finance and insurance to regional, national and international markets. In comparison with fourteen other large cities, Boston had the largest relative export role in services (see Table 10).

Boston's Business Establishments and the Role of Services Activities

Private business establishments in Boston provided over 80 percent of all jobs in the City in 1982; (government and social nonprofit agencies accounted for 16 percent and 4 percent of total employment, respectively). In that year, Boston's 16,550 business establishments employed 446,000 workers. See Table 11. Detailed information on Boston's businesses and their employees, in 1982, recently published by the U.S. Bureau of the Census, in their "County Business Patterns" series, sheds extraordinary light on Boston's economic structure, especially on services activities. Improved statistical reporting coverage highlights the significance of the national services "revolution" in Boston.

In 1982, 6,396 services businesses in Boston had 189,569 employees, or 42 percent of all private employment in the City.

Health services dominated with 54,317 workers (12 percent of private employment) including 49,194 workers in 28 hospitals, 83 nursing and personal care facilities and 42 outpatient facilities. Doctor and dentist offices (755) and laboratories made up the remainder. Boston's hospitals serve a regional, national and international clientele.

Business services followed in importance, with 1,120 establishments and 32,532 workers (7 percent of the total), including concentrations in

Table 10

EXPORT AND IMPORT ROLES IN SERVICES ACTIVITIES
BOSTON AND 14 OTHER LARGE CITIES
PERCENT OF EMPLOYMENT REPRESENTING EXPORTS (+) OR REFLECTING IMPORTS (-)

Large Cities	Services [*]	
	1969	1980
Boston	28.3	40.7
Sunbelt		
Atlanta	16.2	13.3
Houston	15.7	2.7
Los Angeles	12.6	15.6
New Orleans	29.7	24.1
Phoenix	6.1	0.9
Industrial		
Chicago	-2.4	3.3
Cleveland	-5.7	6.7
Detroit	-5.4	6.8
Philadelphia	16.0	29.4
St. Louis	20.9	26.5
Broad-Based Services		
Denver	10.3	15.3
New York	22.7	28.2
San Francisco	19.5	26.4
Washington, D.C.	33.1	33.1

* Business and Professional Services, Health and Higher Education.

Source: U.S. Department of Commerce, Bureau of Economic Analysis
(Location Quotient Analysis).

Table 11

BUSINESS ESTABLISHMENTS AND EMPLOYEES BY DETAILED INDUSTRIES
SUFFOLK COUNTY (BOSTON), 1982

SIC Code	Industry	Establishments		Employees	
		Number	Percent Composition	Number	Percent Distribution
	Agriculture, Forestry, Fisheries	57	.3	413	.1
07	Agricultural Services	44	.3	200	.1
09	Fishing	9	.1	-	-
	Mining	6	.1	31	-
	Contract Construction	762	4.6	16,910	3.8
15	General Contractors	208	1.3	-	-
16	Heavy Construction	45	.3	-	-
17	Special Contractors	509	3.1	6,117	1.4
	Manufacturing	1,046	6.3	53,665	12.0
20	Food Products	82	.5	5,671	1.3
22	Textile Mill Products	20	.1	1,097	.2
23	Apparel and Other Textiles	162	1.0	6,393	1.4
24	Lumber and Wood	20	.1	-	-
25	Furniture and Fixtures	28	.2	673	.2
26	Paper Products	26	.2	1,454	.3
27	Printing and Publishing	319	1.9	14,725	3.3
28	Chemicals and Drugs	27	.2	1,414	.3
30	Rubber and Plastics	19	.1	872	.2
31	Leather Products	22	.1	1,070	.2
32	Stone, Clay, and Glass	12	.1	294	.1
33	Primary Metals	12	.1	386	.1
34	Fabricated Metals	71	.4	3,582	.8
35	Non-Electrical Machinery	57	.3	3,723	.8
36	Electronic Equipment	41	.2	2,231	.5
37	Transportation Equipment	13	.1	1,480	.3
38	Instruments	27	.2	2,190	.1
39	Miscellaneous Manufacturing	50	.3	1,327	.3
	Transportation/Communication/ Utilities	685	4.1	35,972	8.1
41	Local Passenger Transit	94	.6	2,223	.5
42	Trucking and Warehousing	180	1.1	3,133	.7
44	Water Transportation	30	.2	-	-
45	Air Transportation	55	.3	8,573	1.9
47	Transportation Services	198	1.2	2,627	.6
48	Communication	87	.5	12,823	2.9
49	Electric/Gas/Sanitary Services	21	.1	5,584	1.3
	Wholesale Trade	1,423	8.6	21,813	4.9
50	Durable Goods	698	4.2	11,133	2.5
51	Non-Durable Goods	709	4.3	10,098	2.3
	Retail Trade	3,829	23.1	57,415	12.9
52	Building Materials	95	.6	-	-
53	General Merchandise	66	.4	4,617	1.0

Table 11 (continued)

Sic Code	Industry	Establishments		Employees	
		Number	Percent Composition	Number	Percent Distribution
54	Food Stores	477	2.9	8,197	1.8
55	Auto Dealers/Service Stations	281	1.7	2,452	.5
56	Apparel and Accessories	393	2.4	3,369	.8
57	Furniture and Furnishings	192	1.2	1,310	.3
58	Eating and Drinking Places	1,230	7.4	23,156	5.2
59	Miscellaneous Retailing	1,051	6.4	9,043	2.0
	Finance/Insurance/Real Estate	2,072	12.5	69,750	15.6
60	Banking	249	1.5	18,129	4.1
61	Credit Agencies	167	1.0	-	-
62	Security and Commodity Brokers	214	1.3	7,131	1.6
63	Insurance Carriers	188	1.1	24,011	5.4
64	Insurance Agents	345	2.1	6,593	1.5
65	Real Estate	706	4.3	8,108	1.8
67	Holding and Investment Services	178	1.1	2,160	.5
		6,396	38.6	189,569	42.5
70	Hotels and Lodging	77	.5	5,321	1.2
72	Personal Services	586	2.5	4,196	.9
73	Business Services	1,120	6.8	32,532	7.3
(731)	Advertising	109	.7	1,759	.4
(732)	Credit/Mailing/Photography	158	1.0	1,894	.4
(734)	Building Services	105	.6	4,104	.9
(736)	Personnel Services	120	.7	7,746	1.7
(737)	Computer and Data Processing	86	.5	2,036	.5
(739)	Miscellaneous Services	535	3.2	14,875	3.3
75	Auto Repair and Services	420	2.5	36,83	.8
76	Miscellaneous Repair	135	.8	932	.2
78	Motion Pictures	112	.7	-	-
79	Amusement and Recreation	139	.8	3,460	.8
80	Health Services	1,039	6.3	54,317	12.2
81	Legal Services	995	6.0	8,708	2.0
82	Educational Services	167	1.0	30,151	6.8
83	Social Services	371	2.2	9,492	2.1
84	Museums and Gardens	16	.1	1,093	.2
86	Membership Organizations	594	3.6	8,124	1.8
89	Miscellaneous Services	574	3.5	24,450	5.5
(891)	Engineering and Architecture	248	1.5	16,987	3.8
(892)	Non-commercial Research	29	.2	2,631	.6
(893)	Accounting/Auditing/ Bookkeeping	194	1.2	4,270	1.0
(899)	Unclassified Services	103	.6	562	.1
-	Non-Classifiable Establishments	275	1.7	470	.1
Total		16,550	100.0	446,008	100.0

* Boston comprises 96 percent of Suffolk County employment. Sum of 2-digit establishments and employment do not add to totals because non-classified 2-digit administrative and auxiliary units not included in this list.

- Means data was classified and confidential and not disclosed.

Source: U.S. Bureau of the Census, County Business Patterns, Massachusetts, 1982, March 1984.

advertising and personnel services, building services, and computer and data processing.

Educational services were third with 30,151 workers, centered principally in 31 colleges and universities with 27,230 employees. Boston students come from the region, the nation, and the world.

Professional services are significant in Boston and include 8,708 workers in legal services, 16,987 workers in engineering and architecture, 4,270 in accounting, auditing, and bookkeeping, and 2,631 in noncommercial research.

Finance in Boston, in 1982, was served by 2,072 businesses and 69,750 workers (17 percent of the total). This included 249 banking establishments with 18,129 workers, 7,131 workers in the brokerage business, and 2,160 in investment holding companies. Boston banks and investment banking houses have financed development in the nation and the world for more than a century and a half. Boston continues as the leader of the nation's mutual fund industry and is one of the nation's leading money management centers.

The report on business establishments provides significant insight on other aspects of today's Boston economy. Hotels and lodging places, rapidly growing, had 5,321 employees in 1982. In retail trade, 1,230 eating and drinking places dominate with 23,156 workers (5 percent of the total), ranking food stores which have 8,197 employees, and the now expanding general merchandise stores, with 4,617 workers. Communications dominate "Transportation and Communications" with 12,823 workers, followed by air transportation with 8,573 employees, reflecting Boston's role as a business and tourist cross-road and as a disseminator of information and knowledge.

In manufacturing, printing and publishing, apparel, and food processing lead with 26,789 workers, though the most rapidly growing industries--fabricated metals, machinery, electronics, transportation equipment and instruments--comprise 11,016 employees.

Most Boston businesses are small. Two-thirds of all establishments had less than ten employees, and another 23 percent had between 10 and 49 employees. See Table 12. Only one percent of all establishments had more than 250 employees (but these accounted for one-third of total jobs).

Over one third of all private establishments were in services, with another 22 percent in retail trade. Manufacturing accounted for only 6 percent of all establishments.

Suffolk County had approximately the same number of establishments in 1982 as in 1976, but 700 fewer establishments with less than ten employees. Structural change and growth in the economy resulted in an increase in establishment size, with a rise in the number of firms in the 10 to 49 and 50 to 249 employee class. Consequently, the same number of establishments in Suffolk County accounted for 54,000 more jobs in 1982 compared to six years earlier.

Money Management, Venture Capital, and Banking

Boston manages more mutual fund money than any other city. An estimate and analysis published early this year by the Financial Times Survey of London credited eleven Boston firms with managing \$103 billion of mutual funds. See Table 13. The mutual fund industry was born in Boston in 1942 with the creation of the Massachusetts Investors Trust.

Table 13

BOSTON FUND MANAGERS

Name	Funds Under Management (\$Billions)	Ownership
Fidelity Investment	20.0	Independent
Loomis Sayles and Co.	12.5	66% owned by New England Life Insurance
State St. Research & Management	12.0	Metropolitan Life Insurance
Putnam Management	12.0	Marsh and McLennan
Batterymarch Financial	11.3*	Independent
Scudder, Stevens and Clark	11.0	Independent
Massachusetts Financial	8.0	Sun Life Assurance Company of Canada (U.S.)
The Boston Company	6.1	Shearson-American Express
Keystone Massachusetts Group	5.0	Travelers Corporation
Eaton and Howard, Vance Sanders	3.0	Independent
Colonial Management Associates	2.5	Independent

* Discretionary money, excludes money market funds and cash management.

Source: Financial Times Survey, March 6, 1984, London.

Table 12

NUMBER OF BUSINESS ESTABLISHMENTS BY EMPLOYMENT SIZE-CLASS,
BY TYPE OF BUSINESS, SUFFOLK COUNTY,
1976 AND 1982

	All Establishments	1-9	10-49	50-249	250-999	1,000 Or More
		<u>Number</u>				
1982	16,550	11,300	3,881	1,148	171	50
1976	16,803	12,029	3,673	925	133	43
		<u>Percent of Total</u>				
1982	100.0	68.3	23.5	6.9	1.0	0.3
1976	100.0	71.6	21.9	5.5	0.7	0.3

Source: U.S. Bureau of the Census, County Business Patterns, Massachusetts, 1976 and 1982.

In terms of all types of money management, Boston probably ranks second only to New York, especially if the insurance companies are left out, according to the Financial Times Survey. Boston's money dates back to the earliest days of the nation, flowing from the mercantile trade of the 18th century and the industrial revolution of the 19th century. Boston money helped finance the development of the West and Hawaii. The several types of Boston money managers include mutual funds, banks, insurance companies and trust companies. The insurance companies not only invest their own money but also manage pension funds. The trust companies manage money for mutual funds, pension funds, and rich individuals. Justice Samuel Putnam's "prudent man ruling", in 1830, early established Boston as a safe place for people to leave their money. In a suit brought by Harvard University against its trustees, when the value of stock shares bought declined, Justice Putnam ruled that so long as a trustee invests as he would invest for himself, taking into consideration that income was a factor plus the prudent safety of principal, it was perfectly acceptable for Harvard's trustees to buy common stock.

Boston is also the birthplace of the venture capital industry in the U.S. and is still "one of the first ports of call for any U.S. entrepreneur with a good idea, according to the Financial Times Survey. Subsequent to the founding of the first venture capital company in the late 1940s, Boston venture capital firms currently include TA Associates; Greylock; Palmer Organization; the Charles River Partnership; Burr, Egan and Deleage; Morgan, Holland; Matrix Partners and several more. Boston venture capital firms are credited with the start-up of Digital Equipment. More than \$10 billion was raised for

U.S. venture capital investment in the last five years, and \$4 billion was committed in 1983.

The structure of Boston banking is changing radically and the range of financial products and services offered is expanding. New competitive pressures and the emerging role of Boston as the financial capital of New England are bringing change. New institutional development, new laws and new technology are forging pressures for consolidation. Competitive pressures are flowing from the rise of non-banks (Sears, American Express, Merrill Lynch), foreign banks (Lloyds and Barclays), and the role of the big money centers (Citibank and Bank of America). A new and unique development, called "The New England Experiment", is an attempt to create a regional interstate bank network based on new state laws which facilitate interstate mergers in New England but restrict entry by banks outside the region. Consolidation is favored also by the ability of only the largest banks to invest in electronic payments systems and benefit from economies of scale. Currently twelve major mergers are planned and more are expected, according to the Financial Times Survey. Boston banks lead in lending to high technology companies, venture capital investment, leasing, trade financing, trust management, and pension fund investing. Five leading Boston-based bank holding companies had assets of \$40 billion as of the end of 1983. See Table 14.

Legal Services

Boston law firms are expanding to handle more business and to have enough specialty lawyers to deal with cases in areas such as high tech, health care, environment, and cable TV. A decade ago there was hardly a

Table 14

TOP FIVE BOSTON-BASED BANK HOLDING COMPANIES
(Year ended December 31, 1983)

Holding Company	Total Assets (\$M)	Growth Rate	Net Income (\$M)	Growth Rate (Decrease)	Total Deposits (\$M)	Growth Rate	Return On Assets	Return On Equity	Loan Loss Provision (\$M)	Non-Performing Loans & Lease Receivables (\$M)	As % Of Loans
Bank of Boston *	19,538.0	+ 7.0	135.7	+ 9.0	12,381.0	+ 6.0	0.72	14.44	54.0	326.0	2.7
Bank of New England **	5,800.9	+14.5	36.6	+ 2.7	4,887.4	+19.5	0.66	14.23	19.5	66.5	1.72
Shawmut Corporation	5,775.2	+ 7.1	33.0	(3.0)	4,298.7	+ 8.6	0.62	11.68	24.0	68.5	2.1
Baybanks	4,639.3	+25.1	32.0	(3.7)	3,921.2	+23.8	0.77	13.0	5.1	15.2	0.6
State St. Boston Corp. & Subsidiaries	4,044.4	+ 3.3	38.5	(21.3)	2,485.4	+ 1.0	1.03 ***	18.3 ***	4.7	5.4	0.39

- * Announced a definitive acquisition agreement with Colonial Bancorp, a Connecticut-based bank holding company with over \$1.3 billion in assets; and RIHT Financial Corporation of Rhode Island with over \$2 Billion in assets. Agreement to acquire Casco Northern Corporation, the largest banking organization in Maine with \$659 million in assets. Purchase an equity stake in the Chittenden Corporation, the largest bank holding company in Vermont with assets of \$682 million.
- ** Merger pending with CBT Corporation of Hartford Connecticut, with assets of \$1.6 billion. Agreement to acquire Maine National Corporation of Portland, Maine, with assets of \$604 million, subject to approval.
- *** Excludes from earnings the impact of the loss on the sale of subsidiaries of \$2,510,000; net of taxes and related expenses.

Source: Financial Times Survey, March 6, 1984, London.

firm in Boston with 100 lawyers, while as of 1982 there were ten, according to an article in the Boston Globe. As of June 1982, thirteen large Boston firms with a total of 1,391 lawyers had experienced a combined growth in their legal staff of 38 percent since 1979. See Table 15.

High Technology Industry

The high technology industry of the Boston Metro Region is a mainstay and one of the most rapidly growing segments of the State economy, and contributed importantly to mild impact of the 1981-82 recession and the smart resurgence of 1983 and 1984. Six high tech firms are among the fifteen largest employers of the Boston area, according to the Financial Times Survey. See Table 16.

Employment in high technology companies, including computer and information processing equipment firms, as well as those engaged in defense electronics, drug manufacture, biotechnology, robotics and medical instruments makes up more than a third of all manufacturing jobs in Massachusetts, and experienced a 42 percent growth, from 1976 to 1981, in comparison with twelve percent for Massachusetts' manufacturing industry as a whole. See Table 17.

The information processing equipment firms include the Digital Equipment Company, the second largest computer company in the world after IBM, Wang Laboratories, the leading office automation company, and Data-General, a mini-computer firm. Computervision provides equipment for computer-aided manufacturing. Software companies include Cullinet, Lotus Development and Spinnacker Software. The more established high

Table 15

Largest law firms in Boston	Size	Turnover	New hires in 1981	Growth Since 1979	Starting salaries	Top billing rates per hour	% from Harvard
Bingham, Dana & Gould	104	10%	10	45%	\$32,000	\$180	50%
Choate, Hall & Stewart	96	10%	18	19%	\$32,000	\$180	47%
Foley, Hoag & Elliot	95	17%	15	38%	\$34,000	\$170	55%
Gaston Snow & Ely Bartlett	159	4%	25	56%	\$34,000	\$165	31%
Goodwin, Procter & Hoar	124	10%	23	25%	\$35,000	\$200	38%
Hale & Dorr	156	13%	26	28%	\$32,000	\$225	46%
Herrick & Smith	89	12%	14	30%	\$34,000	\$185	40%
Hill & Barlow	62	.04%	9	27%	\$32,000	\$170	60%
Mintz, Levin	67	11%	18	89%	\$32,000	\$210	33%
Nutter, McClennen & Fish	93	6%	15	21%	\$32,000	\$150	38%
Palmer & Dodge	94	16%	18	49%	\$32,000	\$180	56%
Ropes & Gray	154	6%	15	35%	\$34,000	\$200	60%
Sullivan & Worcester	98	0%	18	36%	\$31,500	\$225	35%

Sources: The American Lawyer Guide
All figures as of June 1982

(THE BOSTON GLOBE)

Table 16

TOP 15 EMPLOYERS
(In Boston Area)

Company	City	Number of Employees
Raytheon Corp.	Lexington	72,000
Digital Equipment	Maynard	67,100
Gillette Co.	Boston	30,200
Stop & Shop Companies	Boston	29,000
J. Hancock Mutual	Boston	20,216
Wang Laboratories	Lowell	19,760
Liberty Mutual	Boston	18,791
Data General	Westboro	15,210
Poloroid	Cambridge	14,540
Bank of Boston	Boston	13,000
M/A-Com	Burlington	8,739
Eastern Gas & Fuel Assoc.	Boston	8,470
New England Mutual	Boston	8,218
Dennison Manufacturing	Framingham	8,200
Cabot Corporation	Boston	7,500

Research: Rivka Nachoma

Source.: The Financial Times Survey, March 6, 1984, London.

Table 17

HIGH TECHNOLOGY EMPLOYMENT IN MASSACHUSETTS

Industry	Employment						Change % 1976-81
	1976	1977	1978	1979	1980	1981	
Drugs	2,079	2,059	2,283	2,694	2,723	2,831	36.2
Ordinance and accessories	4,586	4,921	4,894	5,124	5,447	5,559	21.2
Office of computing and accounting machines	21,386	27,060	31,459	39,116	46,142	48,575	127.1
Electrical and electronic machinery, equipment and supplies	83,800	91,000	98,300	104,000	110,500	111,300	32.8
Guided missiles and space vehicles and parts	11,294	11,819	12,158	12,317	11,647	11,289	-
Miscellaneous transportation equipment	1,872	1,660	1,456	1,113	1,062	1,336	-28.6
Instruments, photographic, medical and optical goods, watches and clocks	45,100	51,500	56,400	57,500	58,500	61,300	35.9
Total	170,117	190,019	206,950	222,464	236,021	242,190	42.4
All manufacturing	593,600	621,100	652,100	672,100	674,900	666,800	12.3
High tecnology as a percentage of all manufacturing	28.7	30.6	31.7	33.1	35.0	36.3	

Research: Rivka Nachoma

Source: The Financial Times Survey, March 6, 1984, London.

technology firms with major facilities in the Boston area include Honeywell, Raytheon, Polaroid, and General Electric.

Publishing

Boston's publishing industry, dating back to the early 19th century, continues to thrive on new entrepreneurial directions and the City's intellectual and literary ambience.* Houghton-Mifflin, founded in 1832, published works of Nathaniel Hawthorne and Ralph Waldo Emerson. Little Brown, established in 1837, printed Louisa May Alcott. Beacon Press has just celebrated its 130th anniversary. These venerable publishing houses, and newer ones, including the Atlantic Monthly Press, David Godine, the Boston Publishing Company, and others are thriving on software books, electronic publishing, textbooks, and trade publications. With its universities, Boston is the leader among all major cities in per capita purchases in bookstores, according to the Bureau of Industrial Economics of the U.S. Department of Commerce. This is said to make Boston congenial to industry, which has a strong presence here even with the leadership and ties to New York. Boston publishing has always been nationally focused, with abolitionist works in the nineteenth century and books on feminist concerns and tracts by black writers in recent times.

* Edwin McDowell, New York Times, May 1, 1984, article entitled "Boston Publishing Quietly but Rapidly Modernizes".

The Communications-Information-Knowledge Industries

Boston has a strong foothold in the communications-information-knowledge industries, encompassing communications, business and professional services, finance and high technology equipment production activities, and the potential is extraordinary. These activities represent 37 percent of the City's employment and 28 percent of the value of production, and their projected 50 percent growth to 1990 will dominate, raising the knowledge industry's share of employment in the Boston economy to 47 percent in that year, according to a 1982 study of the Boston Redevelopment Authority (The Communications-Information-Knowledge Industries, and the Potential for Boston). For the nation as a whole, in comparison, the knowledge industries account for a smaller share (24 percent) of employment and production (19 percent), which are projected to grow by one-fourth and one-third, respectively, to 1990. See Table 18.

An analysis of the composition of the knowledge industries sheds light on the relative specialization of Boston and the metro area in relation to that for the nation as a whole. In 1979, Boston had a larger relative concentration in "direct information services" (printing and publishing, business services and education services) than was the case for the nation. See Table 19. The metro area, in turn, had twice the relative share of the "equipment" component of the knowledge industries in relation to that of the nation, while the City's share was negligible. In the case of the third and major component of the knowledge industries "Other Information and Knowledge" (banking, brokerage, legal and other professional services, health services and government) the Boston and nation share exceeded that of the metro area.

COMMUNICATIONS-INFORMATION-KNOWLEDGE INDUSTRIES, U.S., BOSTON, BOSTON METRO AREA
NUMBER OF WORKERS, 1979 AND 1990

SIC	Industry & Components	1979			1990		
		U.S. (000s)	Boston (Suff.)	Metro Area	U.S. (000s)	Boston (Suff.)	Metro Area
A. Basic Communications Industries							
483,9	Broadcasting	193	1,750	3,004	277	2,664	4,572
481,2	Telephone & Telegraph Serv.	1,121	10,971	26,463	1,454	14,881	35,894
	Sub-total	1,314	12,721	29,467	1,731	17,545	40,466
B. Direct Information Industries							
27	Printing & Publishing	1,306	13,228	33,256	1,595	16,736	42,075
732-9	Misc. Business Services (.80)	2,512	17,297	52,979	3,806	27,959	85,643
78	Motion Pictures	308	1,249	2,816	329	1,351	3,046
82	Educational Services	1,403	25,857	80,273	2,149	42,364	131,519
	Sub-total	5,529	57,631	169,594	7,879	88,410	262,283
C. Other Communications-Info. Serv.							
60	Banking	1,492	15,455	31,363	2,013	21,928	44,498
61,2	Credit & Brokerage	898	7,126	12,246	1,329	11,231	19,300
731	Advertising	166	1,443	2,064	213	1,933	2,765
79	Amusement & Recreation	761	3,051	9,481	1,042	4,402	13,679
891-9	Misc. Professional Services	1,720	12,676	29,062	2,413	29,377	48,859
81	Legal		7,125	9,985			
80	Health Services	4,024	49,025	138,069	8,741	86,500	243,609
70	Hotel	1,543	5,046	13,292	2,126	7,335	19,321
734,6	Misc. Business Services (.20)	629	4,471	11,276	951	7,209	18,167
596	Retail-Direct Mail & Phone	250	2,154	7,020	325	2,929	9,547
90,9	Government	4,490	24,894	71,963	5,004	28,329	81,894
	Sub-total	15,973	132,466	335,821	24,157	201,173	501,639
D. Communications-Information Equip.							
357	Computing & Office	586	1,750	20,146	929	2,978	34,288
366	Telephone & Telegraph	641	324	33,692	784	411	42,708
367	Electronic & Components	605	544	18,188	880	841	28,119
381,2	Measuring & Controlling	218	1,575	20,420	296	2,252	29,192
383,5	Optical & Ophthalmic	82	360	5,902	102	465	7,630
386	Photographic and Supplies	134	157	11,405	165	201	14,566
	Sub-total	2,266	4,710	109,753	3,156	7,148	156,503
Total (C-I-K Industries)		25,082	207,528	644,635	36,923	314,276	960,891
Total (All Industries)		104,120	555,513	1,918,612	130,665	668,800	2,357,600

Table 19

Composition of the C-I-K Industries in Boston,
the Metro Area and the U.S., 1979
(Employment, in Percent)

	Boston	Boston Metro Area	U.S.
Communications Services	6	5	5
Direct Information Services	28	26	22
Other Information & Knowledge	64	52	64
Equipment	<u>2</u>	<u>17</u>	<u>9</u>
Total C-I-K Industries	100	100	100

In effect, Boston and its metro area which both have a greater concentration of employment in the knowledge industries than the nation (37 percent, 34 percent, and 24 percent, respectively), there is a clear division of specialization. Boston has a concentration in the communications, information and knowledge services. The metro area has an extraordinary aggregation of high technology equipment production activity.

The City has a population of approximately 600,000, and the metro area has a population of approximately 1,200,000. The City has a high concentration of knowledge workers, and the metro area has a high concentration of high technology equipment production workers. The City has a high concentration of knowledge workers, and the metro area has a high concentration of high technology equipment production workers.

The City has a high concentration of knowledge workers, and the metro area has a high concentration of high technology equipment production workers. The City has a high concentration of knowledge workers, and the metro area has a high concentration of high technology equipment production workers.

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City and County

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Education and Medicine

The City's educational and medical institutions are an important component of its economy. The City has 35 hospitals, including Massachusetts General, University, and the Boston City Hospitals and the New England Medical Center. In addition, the City is the home of the medical and dental schools of Harvard, Tufts, and Boston Universities.

There are 65 colleges and universities in the Boston metropolitan area, at which approximately 250,000 students are enrolled; 125,000 attend institutions in the City. When trade and vocational schools are taken into account, the metropolitan area has over 100 institutions of higher education. The City has more students in relation to population than any other major U.S. city.

Educational and medical institutions provide employment opportunities for residents of the City and its metropolitan area. In addition, expenditures by the institutions' students, patients and visitors are important to the City's trade and service sectors.

The presence of large and growing institutions generates pressure on the City's neighborhoods and housing stock, and public policy is much concerned with balancing institutional growth with neighborhood preservation and needs.

Culture and Tourism

The City has long been recognized as a cultural center. Many organizations are devoted to the various arts and sciences, including major museums such as the Museum of Fine Arts and the Museum of Science,

and well-known performing groups such as the Boston Symphony Orchestra and the Boston Pops.

The City is experiencing an increase in the number of tourists with the completion of new facilities including the Faneuil Hall Marketplace, Copley Place and the John F. Kennedy Library which are attracting large numbers of tourists, and the role of national demographic and personal income growth factors and dollar devaluation factors. According to data compiled by the Greater Boston Convention and Tourist Bureau and the Boston Redevelopment Authority, the number of tourists visiting the City increased from 2.9 million in 1970 to 5.5 million in 1980. Between 1970 and 1976 the number of tourists rose steadily, reaching a peak of 5.2 million in the bicentennial year of 1976. This was followed by a post-bicentennial slump in 1977 to a level of 4.8 million, a rise in 1980 to 5.5 million, and a leveling off at 5.6 million tourists anticipated for 1984.

Boston as a Transportation Center

The City is a major national and international air terminus, a seaport, and the center of New England's rail, truck and bus services. The City is served by three limited access interstate highways which connect it to the national highway system, including the Massachusetts Turnpike which traverses the Commonwealth from the border of New York State directly to downtown Boston.

The emphasis in transportation planning has shifted away from the highway-dominated programs of the past and towards a public transit orientation. Investment in public transportation has been facilitated by federal transportation legislation that has enabled the Massachusetts

Bay Transportation Authority to receive a total of approximately \$2.3 billion since 1965; \$317 million of this total was received in 1981 and \$281 million in 1982 and \$265 million in 1983 for projects in Boston. The current transportation capital program for the next ten years envisions an investment of about \$3 billion in the City's urban area, funded principally by the Federal government.

Important improvements are being made to Boston's mass transit system. Work underway includes the modernization of Red Line stations and tunnels to increase capacity, as well as systemwide signalling and communication improvements designed to reduce travel times. But by far, the most significant component of the ongoing improvements to the City's transit system, is the continued progress on the Southwest Corridor Project (SWCP). The relocation of the Orange Line, which is the core of the SWCP, is expected to be completed in the second half of 1985. The relocated Orange Line, which stretches eight miles from Downtown Boston to Forest Hills in Jamaica Plain and includes nine new stations, is expected to carry more than 120,000 riders daily. Another 20,000 daily riders will use the new commuter rail and high speed Amtrack lines to be located within the Corridor. To date, approximately \$630 million has been invested in the Orange Line relocation and related developments. Another \$60 million will be expended through 1985.

In addition to the relocation of the Orange Line, the SWCP has made available over 80 acres of new parkland and nearly 150 acres of developable land. With the opening of the new Orange Line expected in 1985, intensified planning has begun for the Corridor's remaining development parcels. Planning is also underway for replacement service on the Orange Line's existing route along Washington St. Bus routes or

some combination of buses and light rail are the favored options. A final decision on the replacement service options is expected soon after the completion of the Environmental Impact Statement in November of 1984.

Another proposed facility of considerable importance to Boston's transportation system is the Central Artery Depression and Third Harbor Tunnel Project, whose funding, under the federal interstate highway program, is under consideration by Congress. The project, with an estimated cost of \$2.2 billion, would involve ten to fifteen years of construction time. The benefits of the Central Artery/Harbor Tunnel project are numerous. They include a 65 percent reduction of traffic congestion along the Artery, sufficient capacity to meet projected vehicular use for the next twenty to thirty years, greatly improved access to Logan Airport and the Port of Boston, and the creation of twenty acres of land and air rights in Downtown Boston.

The Massachusetts Port Authority ("MassPort") was created by the General Court of the Commonwealth as a body politic and corporate to stimulate and support the Commonwealth's economy through development and management of the City's major air and sea transportation centers and the Tobin Bridge over the Mystic River. MassPort is financially independent and the City is not responsible for any debt or other obligations incurred by MassPort.

Since MassPort was formed in 1959, heavy use of Boston-Logan International Airport ("Logan Airport") and the Port of Boston has compelled significant expansion of the facilities. Logan Airport, which is served by 34 domestic and international airlines, recently opened for business the last of five major terminal projects.

Air travel passengers arriving at and departing from Logan Airport increased at an annual rate of 5 percent between 1970 and 1982. In 1983, Logan Airport served 17.8 million passengers (up 13 percent from 1982), handled 104 million pounds of mail and carried 493 million pounds of cargo on a total of 289,000 flights.

Investments in Boston's transportation infrastructure is fundamental to the well-functioning and advance of the City's economy, and makes up more than one-fourth of recent and current (1978-84) and scheduled (1985-87) public and private investment in Boston. See the Boston Redevelopment Authority study, Boston's Infrastructure; Investment Record: 1978-83 and Current Plans, and Part II, Investment, of this report.

Relative Cost of Energy in Massachusetts

During the mid-1970s, sizable price increases for energy products adversely affected the economies of the region and the Commonwealth. Thus, it is important to monitor trends in energy costs to anticipate the potential impacts of future energy price changes.

Throughout the 1970s, Massachusetts paid more per unit of energy than the nation as a whole for petroleum, natural gas and electricity. In 1971, the cost of energy to Massachusetts' manufacturers was 58 percent above that of the United States. After the oil shocks of the mid-70s, the difference reached 88 percent. Since 1976, however, the state has improved its competitive position as the energy cost differential receded to the 1971 level (see Table 20).

While businesses, industries, utilities and residents in Massachusetts use relatively more petroleum products than their national

Table 20

COSTS OF PURCHASED FUELS AND ENERGY CONSUMED IN MANUFACTURING,
UNITED STATES, NEW ENGLAND AND MASSACHUSETTS 1971, 1974, 1976, 1980

	Cost in 1980 Dollars per Million BTU				Average Annual Percent Change 1971-80
	1980	1976	1974	1971	
United States	4.06	2.93	2.23	1.48	19.3
New England	6.03	4.43	4.03	2.13	20.3
Massachusetts	6.45	4.93	4.20	2.33	19.6

	Cost Ratio of Massachusetts to United States			
All Fuels	1.59	1.68	1.88	1.58
Electricity	1.67	1.85	1.91	1.51
Oil-Distillate	1.02	1.15	1.11	1.07
Oil-Residual	1.10	1.06	1.08	1.10
Natural Gas	1.43	1.86	2.09	1.87

Source: U.S. Department of Commerce, Annual Survey of Manufacturers, Fuels and Electric Energy Consumed, 1980; New England

Regional

Commission, Analysis of Energy Use in the Manufacturing Sector of New England, March 1979.

counterparts, the price of petroleum has been stable since 1980 (see Appendix Table A). In contrast, the price of deregulated natural gas of which the Commonwealth uses relatively less than other areas of the United States, has risen rapidly since 1976. Accordingly, combined distillate oil and natural gas costs increased at a lower rate for users in the Commonwealth than for users in the United States as a whole during the 1976-1980 period. Improvement of the competitive position of Massachusetts' industrial sector since 1974 is due, in part, both to shrinking energy cost differentials and the lower energy intensiveness of the Commonwealth's industries.

The short-term energy outlook for Massachusetts is good for all sectors. From December 1981 to December 1983, natural gas prices rose 32 percent in the nation (U.S. city average) compared to a 4 percent drop in the Boston area. Over the same period, the price of fuel oil #2 dropped by 13 percent in the Boston area and 12 percent nationwide. As nationwide gas and oil prices reach parity with Massachusetts' oil prices, and conservation and other energy alternatives replace some oil use, the state's competitive position, especially in the industrial sector, will continue to improve. In the long term, however, oil uncertainties cloud the state's outlook. Massachusetts is still vulnerable to sudden oil price hikes or supply shortages due to the state's relative dependence on imported petroleum.

Economic Prospects for Nation and City

The national economy appears headed for strength in 1985, with a 4.5 percent growth in real Gross National Product (adjusted for inflation), a diminishing unemployment rate and a 4 percent rate of

inflation anticipated, for the year as a whole, (see Table 21).

Contrary to previous national recovery periods, unemployment rates are expected to remain high at around 7.5 percent through 1985.

The New England region's economic structure--featuring high technology manufacturing, business and professional services, higher education and medicine--places the region in a favorable position relative to the nation.

Current reports indicate that 1985 will be a year of strong economic growth in the Boston area, the state and the region. New England's high technology companies, largely concentrated in the Boston metropolitan area, resumed employment expansion early this year after a two-year lull. Furthermore, the Massachusetts Division of Employment Security reported in July that more people were working in Massachusetts than at any time in the state's history. In the latest report on unemployment (November 1984), the Massachusetts jobless rate was 3.4 percent, the lowest since 1970, and the lowest unemployment rate among the ten largest industrial states. In the City of Boston, private development completions were at an all-time high in 1984. Development scheduled for the next several years should sustain the expansion and transformation of the City's economic base. Thus, the City has strong growth potential through 1990 and 1995, especially in finance and services. Boston's employment is projected to expand (see Table 22). Employment growth in firms occupying Boston's expanding office space downtown would account for more than one-half of the net new jobs. (See Table 23.)

Table 21

CITY OF BOSTON EMPLOYMENT, 1983, 1990 AND 1995

INDUSTRY	1983	1990	1995	CHANGE 1983-1990		CHANGE 1990-1995	
				NUMBER	PERCENT	NUMBER	PERCENT
AGRI./MINING	566	514	526	- 52	- 9.2	13	2.5
CONSTRUCTION	10,346	12,545	13,586	2,199	21.3	1,041	8.3
MANUFACTURING	46,989	55,250	57,460	8,261	17.6	2,210	4.0
TRANSPORTATION/PU.	39,514	40,599	43,117	1,085	2.7	2,517	6.2
WHOLESALE TRADE	26,028	27,481	28,497	1,453	5.6	1,017	3.7
RETAIL TRADE	56,522	62,649	65,531	6,127	10.8	2,882	4.6
FINANCE/INS/RE	76,245	90,446	95,782	14,201	18.6	5,336	5.9
SERVICES	199,018	238,132	270,994	39,114	19.7	32,862	13.8
HOTEL	6,568	10,707	12,003	4,140	63.0	1,296	12.1
MEDICAL	62,691	74,890	83,277	12,199	19.5	8,388	11.2
EDUCATIONAL	30,848	31,719	34,447	871	2.8	2,728	8.6
CULTURAL	4,975	5,576	5,749	601	12.1	173	3.1
SOCIAL/NONPROFIT	20,698	22,813	23,520	2,115	10.2	707	3.1
BUSINESS	35,425	47,281	54,042	11,856	33.5	6,761	14.3
PROFESSIONAL/OTHER	37,813	45,145	57,955	7,332	19.4	12,810	28.4
GOVERNMENT	91,717	93,599	98,279	1,882	2.1	4,680	5.0
PROPRIETORS	12,699	10,260	8,721	- 2,439	-19.2	- 1,539	-15.0
TOTAL ALL SECTORS	559,643	631,474	682,494	71,831	12.8	51,019	8.1

SOURCE: MASSACHUSETTS DIVISION OF EMPLOYMENT SECURITY,
 ES-202 EMPLOYMENT SERIES AND EMPLOYMENT PROJECTIONS;
 U.S.DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS,
 UNPUBLISHED EMPLOYMENT SERIES, SUFFOLK COUNTY;
 BUREAU OF THE CENSUS, COUNTY BUSINESS PATTERNS, MASSACHUSETTS;
 U.S.DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS.

Table 22

OFFICE EMPLOYMENT, DOWNTOWN BOSTON, 1983, 1990 AND 1995

INDUSTRY -----	1983	1990	1995	CHANGE 1983-1990		CHANGE 1990-1995	
	----	----	----	NUMBER	PERCENT	NUMBER	PERCENT
AGRI./MINING	74	69	72	- 4	- 5.7	3	4.3
CONSTRUCTION	1,242	1,847	2,112	606	48.8	264	14.3
MANUFACTURING	4,699	5,943	6,267	1,244	26.5	324	5.4
TRANSPORTATION/PU.	14,225	16,003	18,222	1,778	12.5	2,219	13.9
WHOLESALE TRADE	1,301	1,474	1,555	172	13.2	82	5.5
RETAIL TRADE	2,826	3,390	3,610	564	19.9	221	6.5
FINANCE/INS/RE	51,846	67,236	72,517	15,389	29.7	5,281	7.9
SERVICES	67,666	89,087	104,134	21,421	31.7	15,047	16.9
GOVERNMENT	17,426	18,939	20,245	1,513	8.7	1,307	6.9
PROPRIETORS	4,953	4,011	3,315	- 941	-19.0	- 696	-17.4
TOTAL ALL SECTORS	166,258	207,999	232,050	41,741	25.1	24,051	11.6

SOURCE: MASSACHUSETTS DIVISION OF EMPLOYMENT SECURITY,
 ES-202 EMPLOYMENT SERIES AND EMPLOYMENT PROJECTIONS;
 U.S.DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS,
 UNPUBLISHED EMPLOYMENT SERIES, SUFFOLK COUNTY;
 BUREAU OF THE CENSUS, COUNTY BUSINESS PATTERNS, MASSACHUSETTS;
 U.S.DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS.

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Table 23

DOWNTOWN BOSTON EMPLOYMENT, 1983, 1990 AND 1995

INDUSTRY -----	1983 ----	1990 ----	1995 ----	CHANGE 1983-1990		CHANGE 1990-1995	
				NUMBER -----	PERCENT -----	NUMBER -----	PERCENT -----
AGRI./MINING	269	252	264	- 17	- 6.1	12	4.8
CONSTRUCTION	4,181	5,239	5,799	1,058	25.3	560	10.7
MANUFACTURING	21,361	25,958	27,591	4,597	21.5	1,633	6.3
TRANSPORTATION/PU.	15,292	16,238	17,625	946	6.2	1,386	8.5
WHOLESALE TRADE	8,266	9,020	9,559	754	9.1	540	6.0
RETAIL TRADE	22,897	26,229	28,040	3,332	14.6	1,811	6.9
FINANCE/INS/RE	59,471	72,911	78,913	13,440	22.6	6,002	8.2
SERVICES	87,523	108,233	125,881	20,710	23.7	17,648	16.3
HOTEL	4,960	8,159	9,447	3,199	64.5	1,288	15.8
MEDICAL	13,149	15,849	18,204	2,700	20.5	2,355	14.9
EDUCATIONAL	7,118	7,385	8,284	267	3.7	899	12.2
CULTURAL	2,766	3,128	3,331	362	13.1	203	6.5
SOCIAL/NONPROFIT	11,722	13,036	13,882	1,314	11.2	846	6.5
BUSINESS	22,666	30,524	36,037	7,858	34.7	5,513	18.1
PROFESSIONAL/OTHER	25,142	30,151	36,694	5,009	19.9	6,543	21.7
GOVERNMENT	50,454	53,214	57,105	2,760	5.5	3,891	7.3
PROPRIETORS	5,684	4,746	4,123	- 938	-16.5	- 623	-13.1
TOTAL ALL SECTORS	275,398	322,041	354,900	46,643	16.9	32,859	10.2

SOURCE: MASSACHUSETTS DIVISION OF EMPLOYMENT SECURITY,
 ES-202 EMPLOYMENT SERIES AND EMPLOYMENT PROJECTIONS;
 U.S.DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS,
 UNPUBLISHED EMPLOYMENT SERIES, SUFFOLK COUNTY;
 BUREAU OF THE CENSUS, COUNTY BUSINESS PATTERNS, MASSACHUSETTS;
 U.S.DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS.

National Capital Investment Trends and The New England Economy

New England's high technology products are principally capital goods, that is, goods used in other manufacturing and services industries. Therefore, it is important to monitor recent trends in capital investment, capacity utilization and construction in the nation (and the region).

The most important indicator of demand for high technology products is national and regional spending on plant and equipment, or "capital investment". As measured by annual percentage change, New England outperformed the nation by large margins in three of the last four years (see Table 24). For 1984, capital spending was expected to rebound with a growth of fifteen percent nationwide and an increase of twenty percent for New England's manufacturers. This compares favorably with the 1981-83 years when capital spending in the nation declined and that for the region expanded at a lesser rate.

According to the Bank of Boston, firms classified as primary defense contractors will account for virtually all of the increase in regional manufacturing investment in 1984. Although the long-term implications of reliance on the defense industry may not be favorable, the prime defense contracts are boosting the regional economy in the short term.

Manufacturing capacity utilization rates reflect the demand for products of New England's high technology industries. National and regional rates fell after 1979, but recovered in 1983 (see Table 25). New England, with an older capital plant, on average, typically has utilization rates that are less than those for the nation as a whole.

Table 24

CAPITAL SPENDING IN MANUFACTURING,
ACTUAL 1959-1983 AND PLANNED 1984,
UNITED STATES AND NEW ENGLAND

A. Capital Spending, 1959-1984, in Millions of Dollars

	<u>United States</u>	<u>New England</u>
1959	13,760	556
1979	98,680	3,379
1980	115,830	4,072
1981	129,390	4,494
1982	119,690	4,537
1983*	110,730	4,794
1984	127,400	5,732

B. Trends in Capital Spending, 1959-1984 (Average Annual Percent Change)

	<u>United States</u>	<u>New England</u>
1959-1979	+10.4%	+ 9.4%
1979-1980	+17.4%	+20.5%
1980-1981	+11.7%	+10.4%
1981-1982	- 7.5%	+ 1.0%
1982-1983*	- 7.5%	+ 5.7%
1983-1984	+15.1%	+19.6%
1979-1984	+ 5.8%	+13.9%

* Planned

Source: Bank of Boston, Economics Department "The 1984 Outlook for Capital Spending Among New England Manufacturing Firms," February 1984; "The 1983 Outlook....," January 1983; "The 1982 Outlook....," March 1982.

Table 25

MANUFACTURING CAPACITY UTILIZATION RATES, AND PERCENT CHANGE, 1975-1981
 UNITED STATES AND NEW ENGLAND COMPARISONS
 (In Percent of Capacity Utilization)

	United States		New England	
	<u>Rate</u>	<u>Change</u>	<u>Rate</u>	<u>Change</u>
1975	72.9		73.9	
1976	79.5	+ 6.6	74.2	+ 0.3
1977	81.5	+ 2.0	74.2	- 2.2
1978	84.4	+ 2.9	78.9	+ 6.9
1979	85.7	+ 1.3	80.1	+ 1.2
1980	79.0	- 6.7	74.3	- 5.8
1981	78.4	- 0.6	75.2	+ 0.9
1982	71.1	- 7.3	69.4	- 5.8
1983	75.4	+ 4.3	73.0	+ 3.6

Source: Bank of Boston, "The 1984 Outlook for Capital Spending Among New England Manufacturing Firms," February 1984.

Structural Transformation in Massachusetts

A comparison of recent employment growth and change, by industry, in the nation and in Massachusetts highlight the favorable transformation of the state's economic structure. Relative to the nation, the state has a higher share of its employment in durable manufactures (including high technology industry) and the number of workers has grown at more than twice the national rate since 1976. See Table 26. In the case of services, the Massachusetts employment share is one-fourth larger and has grown as rapidly (by one-third since 1976).

Table 26

STRUCTURAL TRANSFORMATION AND EMPLOYMENT GROWTH,
IN THE UNITED STATES, MASSACHUSETTS, AND BOSTON,
1970-76-83

	NUMBER OF EMPLOYEES IN THOUSANDS			CHANGE		PERCENT CHANGE		PERCENT DISTRIBUTION		
	1970	1976	1983	1970-76	1976-83	1970-76	1976-83	1970	1976	1983
UNITED STATES										
TOTAL ALL SECTORS	70,880	79,382	90,138	8,502	10,756	12.0	13.5	100.0	100.0	100.0
MINING/CONSTRUCTION	4,211	4,355	4,897	144	542	3.4	12.4	5.9	5.5	5.4
MANUFACTURING	19,367	18,997	18,497	- 370	- 500	- 1.9	- 2.6	27.3	23.9	20.5
DURABLE GOODS	11,208	11,077	10,774	- 131	- 303	- 1.2	- 2.7	15.8	14.0	12.0
NONDURABLE GOODS	8,159	7,920	7,723	- 239	- 197	- 2.9	- 2.5	11.5	10.0	8.6
TRANSPORTATION/PU.	4,515	4,582	4,958	67	376	1.5	8.2	6.4	5.8	5.5
WHOLESALE/RETAIL TR	15,040	17,755	20,804	2,715	3,049	18.1	17.2	21.2	22.4	23.1
FINANCE/INS/RE.	3,645	4,271	5,467	626	1,196	17.2	28.0	5.1	5.4	6.1
SERVICES	11,548	14,551	19,665	3,003	5,114	26.0	35.1	16.3	18.3	21.8
GOVERNMENT	12,554	14,871	15,850	2,317	979	18.5	6.6	17.7	18.7	17.6
MASSACHUSETTS										
TOTAL ALL SECTORS	2,244	2,324	2,671	80	347	3.6	14.9	100.0	100.0	100.0
MINING/CONSTRUCTION	98	67	82	31	15	-31.6	22.4	4.4	2.9	3.1
MANUFACTURING	639	594	624	- 45	30	- 7.0	5.1	28.5	25.6	23.4
DURABLE GOODS	327	326	408	1	82	- 0.3	25.2	14.6	14.0	15.3
NONDURABLE GOODS	312	268	216	- 44	- 52	-14.1	-19.4	13.9	11.5	8.1
TRANSPORTATION/PU.	117	113	118	4	5	- 3.4	4.4	5.2	4.9	4.4
WHOLESALE/RETAIL TR	493	520	602	27	82	5.5	15.8	22.0	22.4	22.5
FINANCE/INS/RE.	127	138	170	11	32	8.7	23.2	5.7	5.9	6.4
SERVICES	450	516	706	66	190	14.7	36.8	20.1	22.2	26.4
GOVERNMENT	320	376	369	56	7	17.5	- 1.9	14.3	16.2	13.8
BOSTON METRO AREA										
TOTAL ALL SECTORS	1,285	1,269	1,500	- 16	231	- 1.2	18.2	100.0	100.0	100.0
MINING/CONSTRUCTION	58	37	44	- 21	7	-36.2	18.9	4.5	2.9	2.9
MANUFACTURING	293	257	284	- 36	27	-12.3	10.5	22.8	20.3	18.9
TRANSPORTATION/PU.	77	68	71	- 9	3	-11.7	4.4	6.0	5.4	4.7
WHOLESALE/RETAIL TR	301	292	333	- 9	41	- 3.0	14.0	23.4	23.0	22.2
FINANCE/INS/RE.	94	94	119	0	25	0.0	26.6	7.3	7.4	7.9
SERVICES	273	327	465	54	138	19.8	42.2	21.2	25.8	31.0
GOVERNMENT	189	194	184	5	10	2.6	- 5.2	14.7	15.3	12.3

SOURCE: U.S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS. PREPARED BY BRA RESEARCH DEPARTMENT, OCTOBER 1984.

